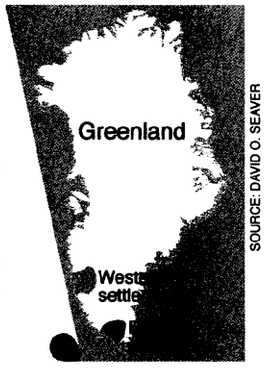
LETTERS

To the core

Examples are given of "ice-core data being applied to human history" in Greenland (right) and elsewhere. Preference is expressed for techniques to detect "weakly interacting massive particles," a "daunting task." "Good news" and "bad news" are offered about the splitting of Yale University's biology department along "levels of analysis." And writers wax eloquent about flying honeybees and how they might "accomplish thermoregulation."



SOURCE: DAVID O. SEAVER

Ice Cores and Human History

In the article "Death in Norse Greenland" by Heather Pringle (Research News, 14 Feb., p. 924), paleoclimatologist Paul Mayewski is said to have been "pleased that the ice-core data are at last being applied to human history." He is referring to new isotope studies on the Greenland Ice Sheet Project Two (GISP2) ice core which show a cold period coinciding with the extinction of the Western Settlement in the middle of the 14th century. Twenty-two years ago, we drew a similar conclusion based on similar data obtained from ice cores (*1*). Even the early history of the epoch of the Norsemen was related to climatic changes. This work has been further confirmed by a compilation of other Greenland isotope profiles along ice cores (*2*).

Other examples of ice-core data being applied to human history include the verification that a giant volcanic eruption was responsible for unusual atmospheric phenomena at the time of Caesar's assassination, as described by Vergil and other contemporary Roman writers (*3*), and the precise dating (1643 ± 7 years B.C.) of the great eruption of Thera in ancient Greece, the after effects of which seriously weakened the Minoan kingdom (*4*).

W. Dansgaard
Niels Bohr Institute, Department of Geophysics, University of Copenhagen, Juliane Maries Vej 30, DK-2100 Copenhagen Ø, Denmark

References

1. W. Dansgaard *et al.*, *Nature* **255**, 24 (1975).
2. S. J. Johnsen *et al.*, *J. Geophys. Res.*, in press.
3. C. V. Hammer *et al.*, *Nature* **288**, 230 (1980).
4. C. V. Hammer et al., *ibid.* **328**, 577 (1987).

Diabetes Project

In the ScienceScope section of 11 April (p. 187), a new initiative on the genetics of adult-onset diabetes in West Africa is described. As participants in this innovative effort, we would like to direct attention to the critical role played by the Office of Research on Minority Health (ORMH) of the U.S. National Institutes of Health, led by John Ruffin. Without the vigorous and enthusiastic support of ORMH, this ambitious partnership among five centers in Ghana and Nigeria, ORMH, Howard University, and the National Human Genome Research Institute could never have come into being.

Georgia M. Dunston
Program Director, Africa-America Diabetes Mellitus Project, Howard University, Washington, DC 20059, USA
Omobosola Akinsete
Project Coordinator, Africa-America Diabetes Mellitus Project, Howard University
Francis S. Collins
Director, National Human Genome Research Institute, Bethesda, MD 20892–2152, USA

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Searching for WIMPs

While the article "To catch a WIMP" by Andrew Watson (Research News, 21 Mar., p. 1736) provides a useful overview of experimental ideas for searching for weakly interacting massive particles (WIMPs), it could give a misleading impression of the relative merits of different techniques, as

only a small minority of approximately 20 experiments described are likely to be capable of making a positive identification of the most favored particle candidate.

Currently, the only theory that predicts a new weakly interacting massive particle and provides estimates of its range of mass and interaction rates is supersymmetry. The experimental challenge is to differentiate—to a precision of 0.1% to 1%—between low energy nuclear-recoil events from dark matter interactions and background electron-recoil events from gamma and beta decay. Only two of the techniques mentioned in the article appear to have such capability. One is the Ge detector of the Cryogenic Dark Matter Search (CDMS) collaboration, which simultaneously measures both thermal energy and ionization. The other is the planned liquid-xenon detector (the U.K. Dark Matter Collaboration—a University of California, Los Angeles–U.K. collaboration), which will simultaneously measure both scintillation and ionization.

It is likely that larger detectors with even more powerful discrimination will be needed to prove conclusively the existence of WIMP dark matter. While this is a daunting task, the discovery of supersymmetric particles in the galactic dark matter could bring particle physics back to the realm of "small" experiments—analogous to the birth of particle physics in the early cosmic-ray studies.

David B. Cline
Department of Physics and Astronomy, University of California, Los Angeles, CA 90095–1547, USA
Peter F. Smith
Rutherford Appleton Laboratory, Chilton, Didcot, Oxfordshire, OX11 OQX, United Kingdom

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Biology Department Splits

I was less than astounded to read of the sundering of Yale University's biology department along "levels of analysis" (W. Roush, News & Comment, 14 Mar., p. 1556), as the tensions that led to the split were already evident in the late 1970s and early 1980s, when I was a graduate student there. Graduate students always feel ill used—it is a crucial part of the graduate experience—but in our case [firmly planted in what would now be the Department of Ecology and Evolutionary Biology (EEB)], we were convinced that the molecular-cellular graduate students were getting better stipends and other privileges. Our faculty may have felt the stresses about hiring and publications alluded to in the article, but we were not privy to them.

The good news about the split for everyone is that interdepartmental collaboration is feasible, at least for graduate students: I interacted much more with members of the Department of Geology and Geophysics than with the suborganismal wing of the Department of Biology. I hope, in addition, that the new EEB department will do well with its increased sovereignty.

The bad news, as the article points out, is the disservice done to undergraduate education. Unless Yale has changed immeasurably since my days there, the vast majority of the majors in molecular, cellular, and developmental biology intend to enter the health professions. It is difficult to imagine a student adequately prepared for medical study who has never taken a course in comparative anatomy or physiology, which I assume would be the province of the EEB department (although, in fact, organismal biology seems to fall obviously into neither camp). On the other hand, EEB undergraduates who have also succumbed to the premed siren song would presumably be lacking a foundation in the molecular mecha-

"Not being a protein chemist, I just want to clone the gene, express it, isolate the protein and move on," says Malcolm Zellars, who's working on his post-doc at Tufts University Medical School in Boston, Massachusetts, USA.